CYCLONIC DISTURBANCES IN SOUTHERN OCEANS

By ALBERT J. MCCURDY, Jr.

South Atlantic Ocean.—Weather reports thus far received from vessels that traversed the shipping routes of the South Atlantic Ocean in October, 1924, indicate only one disturbance of any consequence.

From the 9th to 12th the American S. S. *Swiftwind*, Capt. A. W. Barlow, Texas City to Buenos Aires, experienced southwesterly gales accompanied by heavy head seas off the coast of Uruguay. Mr. A. C. Allen, second officer, states that the lowest barometer, 29.86 inches, was recorded at 8 p. m. on the 9th in 28° 32′ S., 47° W. The wind at the time of the lowest pressure was SW., force 5. By the 12th the gale had increased to force 10 from the southwest but lasted only until noon.

This same gale was experienced by the American S. S. *Tuscaloosa City*, Capt. R. C. Forbes, New York to Montevideo. Mr. T. W. Marvin, second officer, reports that the lowest barometer noted was 29.85 inches, occurring at 2 a. m. on the 10th in 28° 14′ S., 46° 27′ W. The wind at this time was SW., force 8, later increasing to force 11. With the *Tuscaloosa City* this gale lasted until 2 p. m. of the 12th.

South Pacific Ocean.—Of the cyclonic disturbances occurring in the South Pacific Ocean during October, only one of any significance has been reported. This was a depression off the east coast of New Zealand. The British S. S. *Mahana*, Capt. W. Kershaw, Balboa to Auckland, came within its influence on the 11th, experiencing a west-northwesterly gale accompanied by very heavy seas. Messrs. F. Smith, second officer, and F. Gilroy, fourth officer, report that the lowest pressure was 29.48 inches (uncorrected), occurring at 4 p. m. on the 11th in 34° 47′ S., 168° 42′ W. The wind at this time was WNW., force 8, but later shifted to WSW., and increased to force 9 on the 12th. To quote:

> After blowing force 5 from 2 p. m. on the 12th to 2 p. m. on the 13th the wind increased to gale force, maintaining a steady WNW. direction with barometer only fluctuating very slightly.
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> At 10 p. m. the wind fell off a little and by 6 a. m. on the following morning was blowing W., force 5, barometer still steady.

DETAILS OF THE WEATHER IN THE UNITED STATES

GENERAL CONDITIONS

By ALFRED J. HENRY

The outstanding feature of the month was the drought that prevailed east of the 100th meridian and to the south of the parallel of about 37° north latitude. In all of this region precipitation was greatly deficient, save only in the Florida Peninsula, where the tropical cyclone of the 17th–21st was the occasion of heavy rainfall. The rainfall, however, did not extend beyond the limits of the State. Associated with the drought, but whether in the relation of cause and effect is not known, was the tendency for anticyclones to persist over Atlantic Coast States, presumably as a result of the frequent renewal of their supply of polar air from higher latitudes. In that position these anticyclones seemed to form an obstacle to the normal eastward movement of cyclonic systems that approached from the west. The text and charts which follow present the usual details.

CYCLONES AND ANTICYCLONES

By W. P. DAY

The persistence of high-pressure areas over the eastern portion of the country was the outstanding feature of the month. Low-pressure areas formed frequently over the Rocky Mountain and Plateau regions, but made very little headway eastward, and in most cases were forced northward and the southern ends of their troughs were closed by high pressure. The failure of these troughs to traverse the country, closely connected with the prevalence of high pressure to the east, are interesting facts in connection with the drought which prevailed over the Middle and North Atlantic States.

The hurricane which developed during the 13th–18th over the northwestern Caribbean Sea passed over the extreme western end of Cuba on the 19th. It caused some of the lowest barometer readings ever recorded in these regions. A land station, Los Arroyos, reported 27.52 inches and two vessels reported under 28 inches.

FREE-AIR SUMMARY

By V. E. JAKL

The outstanding feature of the month was the frequency with which winds having a decided easterly component occurred at various levels throughout the region covered by aerological stations. This marked easterly tendency of the upper winds was apparently associated with the prevalence of stagnant or slowly moving high-pressure areas, which, instead of the usual succession of high and low pressure areas, largely influenced this portion of the country. The unusual condition of general easterly winds prevailing for a period of days over a considerable portion of the country was observed twice during the month. From the 10th to 12th and from the 20th to 25th, particularly during the latter period, easterly winds to high altitudes were observed with great regularity at nearly all aerological stations. In addition, easterly winds were observed quite frequently on scattered dates and over scattered areas. In the resultants for the month, however, the easterly component is apparent only in the South. Elsewhere east of the Rocky Mountains the resultant winds—especially in the lower 3,000 meters—show a circulation completing the anticyclonic circuit; i. e., southerly over the Mississippi Valley, westerly over the Lake region, and northerly over the Atlantic States. This distribution of resultant winds naturally resulted from the average high pressure for the month over the eastern half of the country.

The effect of the resultant winds on the mean upper-air temperatures is apparent from the figures in Table 1. Broken Arrow, Drexel, and Ellendale, which had winds decidedly more southerly than normal at all altitudes, showed temperatures well above the normal throughout the vertical column. At Royal Center, with normal winds from a general westerly direction, the temperature was also above normal at all levels, due to drainage from the abnormally warm region to the west. At Groesbeck, the most southerly kite station, where the winds were of normal direction and strength from about south, the temperature was very close to normal, while at Due West, another southern station, where winds had a decided northerly component, the temperature was perceptibly below normal for all altitudes observed.

Records of humidity showed no important features, except at Broken Arrow, Drexel, and Ellendale, where with temperature above normal the relative humidity was the same as normal. Consequently, the vapor pressure at these stations was decidedly above normal. Notwithstanding this higher average vapor content of